

NPDES COMPLIANCE INSPECTION REPORT (Coding Instructions on back of last page)

TRANSACTION CODE	NPDES	YR	MO	DA	TYPE	INSP- TOR	FAC TYPE	TIME													
N	5	0	K	0	0	1	6	4	3	8	1	0	1	2	1	S	2	0945			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	a.m.	p.m.

REMARKS
CW-6.9-020 ID#51000040

21	ADDITIONAL	64
65	70	

SECTION A - Permit Summary

NAME AND ADDRESS OF FACILITY (Include County, State and ZIP code)		EXPIRATION DATE
Fansteel, Inc. (metals division)		12-31-80
Number 10 Tantalum Place		ISSUANCE DATE
Muskogee, Muskogee County, Okla. 74401		8-12-79
RESPONSIBLE OFFICIAL	TITLE	PHONE
James A. Pierret	Plant Manager	(918) 687-6303
FACILITY REPRESENTATIVE	TITLE	PHONE
C. Brown	Laboratory Manager	same as above

SECTION B - Effluent Characteristics (Additional sheets attached _____)

PARAMETER/ OUTFALL		MINIMUM	AVERAGE	MAXIMUM	ADDITIONAL
Flow/ 001	SAMPLE MEASUREMENT		.03981 MGD		
	PERMIT REQUIREMENT				
BOD/ 001	SAMPLE MEASUREMENT		8.3 lbs/day		
	PERMIT REQUIREMENT		80 lbs/day	240 lbs/day	
TSS/ 001	SAMPLE MEASUREMENT		7.64 lbs/day		
	PERMIT REQUIREMENT		35 lb/day	70 lbs/day	
NH ₃ -N/ 001	SAMPLE MEASUREMENT		92 lbs/day	468 lbs/day	
	PERMIT REQUIREMENT		156 lbs/day		
fluoride 001	SAMPLE MEASUREMENT		21.26 lbs/day		
	PERMIT REQUIREMENT		25 lbs/day	50 lbs/day	

SECTION C - Facility Evaluation (S = Satisfactory, U = Unsatisfactory, N/A = Not applicable)

S	EFFLUENT WITHIN PERMIT REQUIREMENTS	U	OPERATION AND MAINTENANCE	U	SAMPLING PROCEDURES
S	RECORDS AND REPORTS	N/A	COMPLIANCE SCHEDULE	S	LABORATORY PRACTICES
U	PERMIT VERIFICATION	S	FLOW MEASUREMENTS		OTHER:

SECTION D - Comments

SECTION E - Inspection/Review			ENFORCEMENT DIVISION USE ONLY
SIGNATURES			
INSPECTED BY	AGENCY	DATE	
INSPECTED BY	OWRB	2-28-81	
REVIEWED BY	OWRB	4/7/81	COMPLIANCE STATUS
			<input type="checkbox"/> COMPLIANCE
			<input type="checkbox"/> NONCOMPLIANCE

SECTION B - Effluent Characteristics (Additional sheets attached _____) (Continued)

PARAMETER/ OUTFALL		MINIMUM	AVERAGE	MAXIMUM	ADDITIONAL
potassium 001	SAMPLE MEASUREMENT		239.2 lbs/day		
	PERMIT REQUIREMENT		N/A	N/A	
TOC/ 001	SAMPLE MEASUREMENT		3.65 lbs/day		
	PERMIT REQUIREMENT		N/A	N/A	
COD/ 001	SAMPLE MEASUREMENT		34.12 lbs/day		
	PERMIT REQUIREMENT		N/A	N/A	
Sulfate	SAMPLE MEASUREMENT		1291.98 lbs/day		
	PERMIT REQUIREMENT		N/A	N/A	
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
N	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
1	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
U	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				
	SAMPLE MEASUREMENT				
	PERMIT REQUIREMENT				4/7/11

R6-73 (3-78)

Sections F thru L: Complete on all inspections, as appropriate. N/A = Not Applicable

PERMIT NO.

OK0001643

SECTION F - Facility and Permit BackgroundADDRESS OF PERMITTEE IF DIFFERENT FROM FACILITY
(Including City, County and ZIP code)

DATE OF LAST PREVIOUS INVESTIGATION BY EPA/STATE

80-08-19

FINDINGS

Non Compliance

SECTION G - Records and Reports

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT.

☒ YES ☐ NO ☐ N/A (Further explanation attached _____)

DETAILS:

(a) ADEQUATE RECORDS MAINTAINED OF:

(i) SAMPLING DATE, TIME, EXACT LOCATION

☒ YES ☐ NO ☐ N/A

(ii) ANALYSES DATES, TIMES

☒ YES ☐ NO ☐ N/A

(iii) INDIVIDUAL PERFORMING ANALYSIS

☒ YES ☐ NO ☐ N/A

(iv) ANALYTICAL METHODS/TECHNIQUES USED

☒ YES ☐ NO ☐ N/A

(v) ANALYTICAL RESULTS (e.g., consistent with self-monitoring report data)

☒ YES ☐ NO ☐ N/A

(b) MONITORING RECORDS (e.g., flow, pH, D.O., etc.) MAINTAINED FOR A MINIMUM OF THREE YEARS INCLUDING ALL ORIGINAL STRIP CHART RECORDINGS (e.g. continuous monitoring instrumentation, calibration and maintenance records).

☒ YES ☐ NO ☐ N/A

(c) LAB EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS KEPT.

☒ YES ☐ NO ☐ N/A

(d) FACILITY OPERATING RECORDS KEPT INCLUDING OPERATING LOGS FOR EACH TREATMENT UNIT.

☒ YES ☐ NO ☐ N/A

(e) QUALITY ASSURANCE RECORDS KEPT.

☒ YES ☐ NO ☐ N/A

(f) RECORDS MAINTAINED OF MAJOR CONTRIBUTING INDUSTRIES (and their compliance status) USING PUBLICLY OWNED TREATMENT WORKS.

☐ YES ☐ NO ☒ N/A**SECTION H - Permit Verification**

INSPECTION OBSERVATIONS VERIFY THE PERMIT.

☐ YES ☒ NO ☐ N/A (Further explanation attached Yes)

DETAILS:

(a) CORRECT NAME AND MAILING ADDRESS OF PERMITTEE.

☒ YES ☐ NO ☐ N/A

(b) FACILITY IS AS DESCRIBED IN PERMIT.

☒ YES ☐ NO ☐ N/A

(c) PRINCIPAL PRODUCT(S) AND PRODUCTION RATES CONFORM WITH THOSE SET FORTH IN PERMIT APPLICATION.

☒ YES ☐ NO ☐ N/A

(d) TREATMENT PROCESSES ARE AS DESCRIBED IN PERMIT APPLICATION.

☒ YES ☐ NO ☐ N/A

(e) NOTIFICATION GIVEN TO EPA/STATE OF NEW, DIFFERENT OR INCREASED DISCHARGES.

☐ YES ☐ NO ☒ N/A

(f) ACCURATE RECORDS OF RAW WATER VOLUME MAINTAINED.

☒ YES ☐ NO ☐ N/A

(g) NUMBER AND LOCATION OF DISCHARGE POINTS ARE AS DESCRIBED IN PERMIT.

☐ YES ☒ NO ☐ N/A

(h) CORRECT NAME AND LOCATION OF RECEIVING WATERS.

☒ YES ☐ NO ☐ N/A

(i) ALL DISCHARGES ARE PERMITTED.

☐ YES ☒ NO ☐ N/A**SECTION I - Operation and Maintenance**

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED.

☐ YES ☒ NO ☐ N/A (Further explanation attached Yes)

DETAILS:

(a) STANDBY POWER OR OTHER EQUIVALENT PROVISIONS PROVIDED.

☒ YES ☐ NO ☐ N/A

(b) ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE.

☒ YES ☐ NO ☐ N/A

(c) REPORTS ON/ALTERNATE SOURCE OF POWER SENT TO EPA/STATE AS REQUIRED BY PERMIT.

☒ YES ☐ NO ☐ N/A

(d) SLUDGES AND SOLIDS ADEQUATELY DISPOSED. see attached pages

☐ YES ☒ NO ☐ N/A

(e) ALL TREATMENT UNITS IN SERVICE.

☒ YES ☐ NO ☐ N/A

(f) CONSULTING ENGINEER RETAINED OR AVAILABLE FOR CONSULTATION ON OPERATION AND MAINTENANCE PROBLEMS.

☒ YES ☐ NO ☐ N/A

(g) QUALIFIED OPERATING STAFF PROVIDED.

☒ YES ☐ NO ☐ N/A

(h) ESTABLISHED PROCEDURES AVAILABLE FOR TRAINING NEW OPERATORS.

OJT

☒ YES ☐ NO ☐ N/A

(i) FILES MAINTAINED ON SPARE PARTS INVENTORY, MAJOR EQUIPMENT SPECIFICATIONS, AND PARTS AND EQUIPMENT SUPPLIERS.

☒ YES ☐ NO ☐ N/A

(j) INSTRUCTIONS FILES KEPT FOR OPERATION AND MAINTENANCE OF EACH ITEM OF MAJOR EQUIPMENT.

☒ YES ☐ NO ☐ N/A

(k) OPERATION AND MAINTENANCE MANUAL MAINTAINED.

☒ YES ☐ NO ☐ N/A

(l) SPCC PLAN AVAILABLE. PCB transformer in storage. See SPCC Report

☐ YES ☒ NO ☐ N/A

(m) REGULATORY AGENCY NOTIFIED OF BY PASSING. (Dates _____)

☐ YES ☒ NO ☐ N/A

(n) ANY BY-PASSING SINCE LAST INSPECTION.

☐ YES ☒ NO ☐ N/A

(o) ANY HYDRAULIC AND/OR ORGANIC OVERLOADS EXPERIENCED.

☐ YES ☐ NO ☒ N/A

PERMIT NO.

OKG001643

SECTION J - Compliance Schedules

PERMITTEE IS MEETING COMPLIANCE SCHEDULE.

☐ YES ☐ NO ☒ N/A (Further explanation attached _____)

CHECK APPROPRIATE PHASE(S):

- ☐ (a) THE PERMITTEE HAS OBTAINED THE NECESSARY APPROVALS FROM THE APPROPRIATE AUTHORITIES TO BEGIN CONSTRUCTION.
- ☐ (b) PROPER ARRANGEMENT HAS BEEN MADE FOR FINANCING (mortgage commitments, grants, etc.).
- ☐ (c) CONTRACTS FOR ENGINEERING SERVICES HAVE BEEN EXECUTED.
- ☐ (d) DESIGN PLANS AND SPECIFICATIONS HAVE BEEN COMPLETED.
- ☐ (e) CONSTRUCTION HAS COMMENCED.
- ☐ (f) CONSTRUCTION AND/OR EQUIPMENT ACQUISITION IS ON SCHEDULE.
- ☐ (g) CONSTRUCTION HAS BEEN COMPLETED.
- ☐ (h) START-UP HAS COMMENCED.
- ☐ (i) THE PERMITTEE HAS REQUESTED AN EXTENSION OF TIME.

SECTION K - Self-Monitoring Program

Part 1 - Flow measurement (Further explanation attached ✓ flow calibration)PERMITTEE FLOW MEASUREMENT MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT.
DETAILS:☒ YES ☐ NO ☐ N/A

(a) PRIMARY MEASURING DEVICE PROPERLY INSTALLED.

☒ YES ☐ NO ☐ N/ATYPE OF DEVICE: ☒ WEIR ☐ PARSHALL FLUME ☐ MAGMETER ☐ VENTURI METER ☐ OTHER (Specify _____)(b) CALIBRATION FREQUENCY ADEQUATE. (Date of last calibration 04/05 11/21/80)☒ YES ☐ NO ☐ N/A

(c) PRIMARY FLOW MEASURING DEVICE PROPERLY OPERATED AND MAINTAINED.

☒ YES ☐ NO ☐ N/A

(d) SECONDARY INSTRUMENTS (totalizers, recorders, etc.) PROPERLY OPERATED AND MAINTAINED.

☒ YES ☐ NO ☐ N/A

(e) FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGES OF FLOW RATES.

☒ YES ☐ NO ☐ N/APart 2 - Sampling (Further explanation attached yes)

PERMITTEE SAMPLING MEETS THE REQUIREMENTS AND INTENT OF THE PERMIT.

☐ YES ☒ NO ☐ N/A

DETAILS:

(a) LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES.

☒ YES ☐ NO ☐ N/A

(b) PARAMETERS AND SAMPLING FREQUENCY AGREE WITH PERMIT.

☒ YES ☐ NO ☐ N/A

(c) PERMITTEE IS USING METHOD OF SAMPLE COLLECTION REQUIRED BY PERMIT.

☒ YES ☐ NO ☐ N/AIF NO, ☐ GRAB ☐ MANUAL COMPOSITE ☐ AUTOMATIC COMPOSITE FREQUENCY _____

(d) SAMPLE COLLECTION PROCEDURES ARE ADEQUATE.

☒ YES ☐ NO ☐ N/A

(i) SAMPLES REFRIGERATED DURING COMPOSITING

☒ YES ☐ NO ☐ N/A

(ii) PROPER PRESERVATION TECHNIQUES USED

☐ YES ☒ NO ☐ N/A

(iii) FLOW PROPORTIONED SAMPLES OBTAINED WHERE REQUIRED BY PERMIT

☐ YES ☐ NO ☒ N/A

(iv) SAMPLE HOLDING TIMES PRIOR TO ANALYSES IN CONFORMANCE WITH 40 CFR 136.3

☒ YES ☐ NO ☐ N/A(e) MONITORING AND ANALYSES BEING PERFORMED MORE FREQUENTLY THAN REQUIRED BY PERMIT. 5 times a week for pH & Fluoride☒ YES ☐ NO ☐ N/A

(f) IF (e) IS YES, RESULTS ARE REPORTED IN PERMITTEE'S SELF-MONITORING REPORT.

☒ YES ☐ NO ☐ N/APart 3 - Laboratory (Further explanation attached Yes)

PERMITTEE LABORATORY PROCEDURES MEET THE REQUIREMENTS AND INTENT OF THE PERMIT.

☒ YES ☐ NO ☐ N/A

DETAILS:

(a) EPA APPROVED ANALYTICAL TESTING PROCEDURES USED. (40 CFR 136.3)

☒ YES ☐ NO ☐ N/A

(b) IF ALTERNATE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED.

☐ YES ☐ NO ☒ N/A

(c) PARAMETERS OTHER THAN THOSE REQUIRED BY THE PERMIT ARE ANALYZED.

☒ YES ☐ NO ☐ N/A

(d) SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT.

☒ YES ☐ NO ☐ N/A

(e) QUALITY CONTROL PROCEDURES USED.

☒ YES ☐ NO ☐ N/A(f) DUPLICATE SAMPLES ARE ANALYZED. 400 % OF TIME. for BOD, 100% for TSS☒ YES ☐ NO ☐ N/A(g) SPIKED SAMPLES ARE USED. 100 % OF TIME. for fluoride, NH₃-N, pH☒ YES ☐ NO ☐ N/A

(h) COMMERCIAL LABORATORY USED.

☐ YES ☒ NO ☐ N/A

(i) COMMERCIAL LABORATORY STATE CERTIFIED.

See ☒ YES ☐ NO ☒ N/A

LAB NAME _____

LAB ADDRESS _____

PERMIT NO.

OK1643

SECTION L - Effluent/Receiving Water Observations (Further explanation attached _____)

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	VISIBLE FLOAT SOL	COLOR	OTHER
001	None	None	Low	None	None	Clear	
unpermit							
discharge	None	None	Medium	None	small amounts	Cloudy	

(Sections M and N: Complete as appropriate for sampling inspections)

SECTION M - Sampling Inspection Procedures and Observations (Further explanation attached _____)

- ☒ GRAB SAMPLES OBTAINED
- ☒ COMPOSITE OBTAINED
- ☐ FLOW PROPORTIONED SAMPLE
- ☒ AUTOMATIC SAMPLER USED
- ☒ SAMPLE SPLIT WITH PERMITTEE
- ☒ CHAIN OF CUSTODY EMPLOYED
- ☐ SAMPLE OBTAINED FROM FACILITY SAMPLING DEVICE

11/21/80

X
X
X
X

COMPOSITING FREQUENCY 2 samples every two hours PRESERVATION _____

SAMPLE REFRIGERATED DURING COMPOSITING: ☒ YES ☐ NO

SAMPLE REPRESENTATIVE OF VOLUME AND NATURE OF DISCHARGE Yes

SECTION N - Analytical Results (Attach report if necessary)

Flow Calculation Sheet

Field Data: Date 1-21-80 Time 1043 hrs.

Head .87 Inches or .075'

Type & Size of Flow Monitoring Device 7" rect. weir

Name & Model of Flow Monitoring Device LIV/Model 1

Recorded Flow at date & time listed above 20% = 17.5 GPM

.0252 MGD

Reference for Flow Calculations Stevens Water Resources Data Book, Table 7, p. 32

Formula:

$$CFS = 3.33(1-.2H) L^{3/2} \quad MGD = CFS \times .646317$$

Calculations:

$$CFS = 3.33 (.585 - (.585 \times .075)) .075^{3/2}$$

$$CFS = 3.33 (.585 - .0146) .0197$$

$$CFS = 3.33 (.5704) .0197$$

$$CFS = .1373$$

$$MGD = .1373 \times .646317 = .0240956 \approx .0241$$

$$\% \text{ error} = \frac{\text{recorded value} - \text{calculated value}}{\text{calculated value}} (100)$$

$$\% \text{ error} = \frac{.0252 - .0241}{.0241} \times 100 = 4.56\%$$

$$\% \text{ error} = .0241$$

DMR Calculation Check

Reporting Period: From 80 10 1 To 80 10 31
year month day year month day

Parameter Checked: Fluoride

	<u>Quantity</u>		
	<u>Min.</u>	<u>Avg.</u>	<u>Max.</u>
Reported Value:		23.7 lbs/day	49.5 lbs/day
Calculated Value:		23.7 lbs/day	49.5 lbs/day
Permit Value:		25 lbs/day	50 lbs/day

If calculated value does not equal reported value, explain:

Administrative Order Compliance

Date A0 issued : _____
Date A0 Due : _____
Date A0 Received : _____
Date A0 Closed : _____

Administrative Order complied with? Yes _____ No _____.
If no, list each item not complied with and areas of non-compliance.

Mercury Disposal

Describe method used for disposal of mercury (Hg) used in laboratory,
if applicable.

See JPLER Compliance Instructions Report 8-15-6
for disposal of mercury used in laboratory

Date 3-16-81Permit No. OK0001643NPDES Compliance Inspection Report
Further ExplanationsPage 2 of 4Section H Part g,1Detail

The unpermitted discharge originates from storm water runoff flowing through an area that was contaminated from previous spills. The contaminated runoff is the discharge into the Arkansas River. The discharge point is located S. E. from Chem A Building.

Page 3 of 4Section k Part 2Detail d-ii

Samples are not refrigerated during the period after samples are taken and before the analyses is started. The period duration is 1-3 hours.

Page 3 of 4Section K Part 3Detail a -

The fluoride analytical procedures (e.g. distillation) are performed in an open area instead of being performed under a hood.

W
↑

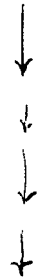
Basin No 8

Basin
No 7

Basin 6

Basin 5

Out-
fall
COI



contaminated
Runoff
THERM.
Bios

contaminated
Runoff

Chemical "A" BLOC

Basin
No 1

Basin
No 2

NH₄ Tanks

LIQUID
WASTES

Basin No 4

Basin No 2

N

Arkansas River

Preliminary results from Fansteel's monitoring wells indicate possible groundwater contamination from their lagoons and dike area around the ammonia tanks for fluorides and $\text{NH}_3\text{-N}$. Attached to this report is data we collected that could possibly account for the contamination of groundwater on the east side of the facility.

SAMPLE 77461 DWRH NUMBER 4837
DATE 03/19/81 TIME 11:15
DATE 03/20/81
DATE 03/27/81
FANSTEEL OK
JJ8

OKLAHOMA STATE DEPARTMENT OF
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	58.900 MG/L	FLUORIDE TOTAL	48.00 MG/L
KJELDAHL NITROGEN N	60.820 MG/L	NITRITE-NITRATE	92.1 MG/L
TOTAL ALKALINITY	167 MG/L	TOTAL HARDNESS	3612 MG/L

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNATURE

OKLA WATER RESOURCES BOARD
Muskogee

Muskogee

LEGAL
NN SW 16 15N 19E I

CONTAMINATED RUNOFF THAT IS DISCHARGED
COMMENTS GE INT ARKANSAS

ANALYST
COMMENTS

REQUISITIONER COPY

Lois K. Brown

77008 DWRB NUMBER 4822
DATE 02/26/81 TIME 10:00
DATE 02/28/81
DATE 03/11/81
FANTSTEEL
J.J. BLACK

OKLAHOMA STATE DEPARTMENT OF
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

CCF

OKLAHOMA WATER RESOURCES BOARD

FLUORIDE IN SEDIMENT	110000.0 MG/KG	TOTAL ALKALINITY	13900 MG/KG
TOTAL HARDNESS	< 1000 MG/KG	TOTAL PHOS IN SED	82.0 MG/KG
CHROMIUM IN SEDIMENT	40.00 MG/KG	CADMIUM IN SEDIMENT	2.00 MG/KG
CALCIUM IN SEDIMENT	3200.00 MG/KG	COPPER IN SEDIMENT	17.00 MG/KG
LEAD IN SED	76.00 MG/KG	POTASSIUM IN SED	160.00 MG/KG
ZINC IN SED	400.00 MG/KG		

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

OKLA WATER RESOURCES BOARD

REMARKS CODE EXPLANATIONS

< LESS THAN DETECTION LIMIT

LEGAL

SW SEC 16 T 15N R 19E J

CONTAMINATED RUNOFF THAT IS DIS-
CHARGE INTO ARKANSAS RIVER. SEDIMENT

ANALYST
OF ANALYST

REQUISITIONER COPY

ANALYST

Ruby McIlwain

77007 OWRH NUMBER 4821
 02/26/81 TIME 10:00
 02/28/81
 03/10/81
 FANSTEEL
 J.J. BLACK

OKLAHOMA STATE DEPT.
 STATE WATER RESOURCES BOARD
 WATER ANALYSIS

WATER QUAL DIV
 OKLA WATER RESOURCES BOARD
 12TH FLOOR OSDH BLDG
 OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

CHEMICAL OXY DEM HL	163.5 MG/L	FLUORIDE TOTAL	I	MG/L
PH	10.1 SU	SUSPENDED SOLIDS		26 MG/L
TOT DISSOLVED SOLIDS	18910 MG/L	TOTAL ALKALINITY	I	MG/L
TOTAL HARDNESS	I	TOTAL ORGANIC CARBON		54.2 MG/L
TOTAL PHOSPHOROUS P	.330 MG/L	CADMIUM-TOTAL		5 UG/L
CALCIUM-TOTAL	< 1.0 MG/L	CHROMIUM-TOTAL		31 UG/L
COPPER-TOTAL	114 UG/L	LEAD-TOTAL	<	20 UG/L
MANGANESE-TOTAL	20.0 UG/L	POTASSIUM-TOTAL		850.00 MG/L
SODIUM-TOTAL	7000.00 MG/L	ZINC-TOTAL	<	4 UG/L
OIL AND GREASE	6.9 MG/L			

SEE REVERSE SIDE FOR ANALYST REPORT & COMMENTS

OKLA WATER RESOURCES BOARD

REMARKS *Mushy* CODE EXPLANATIONS

I REJECTED, INSUFFICIENT SAMPLE
 < LESS THAN DETECTION LIMIT

NW SW 16 15N 19E I

CONTAMINATED RUNOFF THAT IS DIS-
 CHARGE INTO ARKANSAS RIVER. FANSTEEL.

REQUISITIONER COPY

SAMPLE - 77006 DWRB NUMBER 4820
DATE COL 02/26/81 TIME 09:00
DATE RECD 02/29/81
DATE LAB REP 03/11/81
STATION FANSTEEL
COLLECTOR J.J. BLACK

OKLAHOMA STATE DEPARTMENT OF
STATE WATER QUALITY LAB
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

CONF

OKLAHOMA WATER RESOURCES BOARD

FLUORIDE IN SEDIMENT	120000.0 MG/KG	PH	2.6 SU
SULFATE IN SEDIMENT	27140 MG/KG	TOTAL ALKALINITY	< 1500 MG/L
CHROMIUM IN SEDIMENT	1545.00 MG/KG	CADMIUM IN SEDIMENT	1.00 MG/KG
CALCIUM IN SEDIMENT	2100.00 MG/KG	COPPER IN SEDIMENT	44.00 MG/KG
IRON IN SEDIMENT	56000.00 MG/KG	MANGANESE IN SED	1200.00 MG/KG
MERCURY IN SED	< .1 MG/KG	POTASSIUM IN SED	150.00 MG/KG
SODIUM IN SED	420.00 MG/KG		

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

SOURCE
PROGRAM OKLA WATER RESOURCES BOARD
COUNTY *Muskogee*

Muskogee
REMARKS: ~~CODE~~ EXPLANATIONS
< LESS THAN DETECTION LIMIT

LEGAL
NW SW SEC 16 T15N R17E E

SAMPLES SLUDGE FROM POND 2, FANSTEEL.
COMMENTS

ANALYST LEAD = 118 MG/KG. SELENIUM = < .25
COMMENTS MG/KG. ZINC = 46 MG/KG.

LABORATORY

REQUISITIONER COPY

ANALYST *Lesley McElroy*

SAMPLE NO. 76093 DWRB NUMBER 4771
DATE COLLECTED 01/21/81 TIME 11:00
DATE RECEIVED 01/23/81
DATE ANALYZED 02/27/81
STATION POND 6
COLLECTOR JJ BLACK

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	193.000 MG/KG	CHLORIDE IN SEDIMENT <	1000 MG/KG
FLUORIDE IN SEDIMENT	7100.00 MG/KG	NITRATE/NITRITE-SED <	50.0 MG/KG
PH	8.6 SU	SULFATE IN SEDIMENT	4254 MG/KG
TOTAL ALKALINITY	2811 MG/L	TOTAL HARDNESS	2508 MG/KG
CHROMIUM IN SEDIMENT	475.00 MG/KG	CADMIUM IN SEDIMENT <	1.00 MG/KG
CHROMIUM HEX IN SED <	2.5 MG/KG	COPPER IN SEDIMENT	58.00 MG/KG
LEAD IN SED	12.00 MG/KG	MERCURY IN SED <	.5 MG/KG
POTASSIUM IN SED	150.00 MG/KG	ZINC IN SED	73.00 MG/KG

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

OKLA WATER RESOURCES BOARD

Muskogee
REMARKS: *GOOD EXPLANATIONS*
< LESS THAN DETECTION LIMIT

LEGAL
NW SW 16 15N 19E I

SEDIMENTS OF LAGOON 6

ANALYSIS: *all values in mg/kg*

REQUISITION NO. 0000

RECEIVED
MAR 2 1981

OKLAHOMA WATER
RESOURCES BOARD

Lochy McElwain

SAMPLE NUMBER 76094 OWRB NUMBER 4777
DATE COLLECTED 01/21/81 TIME 11:20
DATE RECEIVED 01/23/81
DATE OF ANALYSIS 02/27/81
STATION POND 8
COLLECTED BY JJ BLACK

OKLAHOMA STATE DEPARTMENT OF
STATE WATER QUALITY
WATER ANALYSIS

MAR 5 1981

OKLAHOMA WATER
RESOURCES BOARD

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	55.800 MG/L	CALCIUM HARDNESS	131700.0 MG/L
CHLORIDE IN SEDIMENT <	1000 MG/KG	FLUORIDE IN SEDIMENT	1150.00 MG/KG
NITRATE/NITRITE-SED <	50.0 MG/KG	PH	11.8 SU
SULFATE IN SEDIMENT	17360 MG/KG	TOTAL ALKALINITY	54260 MG/L
TOTAL HARDNESS	183400 MG/L	CHROMIUM IN SEDIMENT	20.00 MG/KG
CADMIUM IN SEDIMENT <	1.00 MG/KG	CHROMIUM HEX IN SED <	2.5 MG/KG
COPPER IN SEDIMENT	16.00 MG/KG	LEAD IN SED <	10.00 MG/KG
MERCURY IN SED <	.5 MG/KG	POTASSIUM IN SED	28.00 MG/KG
ZINC-TOTAL	29 UG/L		

SEE PLATE 15 OF FOR WATER QUALITY REPORT SIGNIFICANCE

SOURCE
PROGRAM OKLA WATER RESOURCES BOARD
COUNTY

REMARKS CODE EXPLANATIONS
< LESS THAN DETECTION LIMIT

SAMPLERS SEDIMENT OF LAGOON
COMMENTS

ANALYST
COMMENTS

REQUISITIONER COPY

Robert R. Johnson

76092 OWRB NUMBER 4770
01/21/81 TIME 11:10
01/23/81
02/27/81
POND 7
JJ BLACK

RECEIVED
MAR 5 1981

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER
RESOURCES BOARD

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	126.000	MG/KG	CALCIUM HARDNESS	48780.0	MG/L
CHLORIDE IN SEDIMENT <	1000	MG/KG	FLUORIDE IN SEDIMENT	17000.00	MG/KG
NITRATE/NITRITE-SED <	50.0	MG/KG	PH	8.1	SU
SULFATE IN SEDIMENT	5430	MG/KG	TOTAL ALKALINITY	2559	MG/L
TOTAL HARDNESS	54200	MG/KG	CHROMIUM IN SEDIMENT	202.00	MG/KG
CADMIUM IN SEDIMENT <	1.00	MG/KG	CHROMIUM HEX IN SED <	2.5	MG/KG
COPPER IN SEDIMENT	34.00	MG/KG	LEAD IN SED	22.00	MG/KG
MERCURY IN SED <	.5	MG/KG	POTASSIUM IN SED	260.00	MG/KG
ZINC IN SED	57.00	MG/KG			

OKLA WATER RESOURCES BOARD

REMARKS: *Mushy*
CODE EXPLANATIONS
< LESS THAN DETECTION LIMIT

SEDIMENT

ANALYSTS
COMMENTS

Pat. Dec 21/81

77005 OWRB NUMBER 4819
02/26/81 TIME 09:30
02/28/81
03/10/81
FANSTEEL
J.J. BLACK

OKLAHOMA STATE DEPARTMENT OF
STATE WATER
WATER ANALYSIS

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

CALCIUM HARDNESS	1185.0 MG/L	FLUORIDE TOTAL	16.40 MG/L
PH	7.8 SU	TOTAL ALKALINITY	160 MG/L
CALCIUM-TOTAL	368.0 MG/L	COPPER-TOTAL	23 UG/L
POTASSIUM-TOTAL	210.00 MG/L	ZINC-TOTAL	6 UG/L

USE REVERSE SIDE FOR TEST QUALITY REPORT ONLY

OKLA WATER RESOURCES BOARD

Mushy

NW SW 16 15N 19E 2

WATER EAST OF LIME PILE, EAST OF
CHEMA BLDG. FANSTEEL.

ANALYST
COMMENTS

REQUISITION COPY

Ruby McElroy

77003 DWRB NUMBER 4817
02/26/81 TIME 09:45
02/28/81
03/11/81
FANSTEEL
J.J. BLACK

OKLAHOMA STATE DEPARTMENT
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

CALCIUM HARDNESS	<	2.5 MG/L	CHEMICAL OXY DEM HL	98.9 MG/L
FLUORIDE TOTAL		18300.00 MG/L	PH	7.2 SU
SUSPENDED SOLIDS		14 MG/L	TOT DISSOLVED SOLIDS	13190 MG/L
TOTAL ALKALINITY		14030 MG/L	TOTAL HARDNESS	< 10 MG/L
TOTAL ORGANIC CARBON		11.0 MG/L	CALCIUM-TOTAL	< 1.0 MG/L
POTASSIUM-TOTAL		1000.00 MG/L	SODIUM-TOTAL	151.00 MG/L
ZINC-TOTAL		79 UG/L		

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

OKLA WATER RESOURCES BOARD

Mushige
REMARKS: CODE EXPLANATIONS
< LESS THAN DETECTION LIMIT

LEGAL
NW 30 16 15N 19E2

WATER SURROUNDING NH3 TOWER.
FAN STEEL

ANALYTE
COMMENTS

REQUISITE COPY

ANALYST

Rocky McIlhenny

77004 DARK NUMBER 4018
02/26/81 TIME 10:00
02/27/81
03/24/81
FANSTEEL
J J. BLACK

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSOR BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

CALCIUM HARDNESS	12200.0 MG/L	FLUORIDE IN SEDIMENT	130000.0 MG/KG
TOTAL ALKALINITY	657 MG/L	TOTAL HARDNESS	19510 MG/L
TOTAL PHOS IN SED	250.0 MG/KG	CALCIUM IN SEDIMENT	6660.00 MG/KG
POTASSIUM IN SED	88.00 MG/KG	ZINC IN SED	29.00 MG/KG

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGN F CANE

OKLA WATER RESOURCES BOARD
Muskogee

Muskogee

LEGAL
NW - SW 16 - 15N - 19E IV

SEDIMENTS SURROUNDING NH3 TOWER.
FANSTEEL.

ANALYST
COMMENTS

OKLAHOMA CITY

REQUISITIONER COPY

ANALYST

John P. [Signature]

OKLAHOMA STATE DEPARTMENT OF HEALTH
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

C25.

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	65MG.00 MG/L	KJELDAHL NITROGEN N	69350.00 MG/L
NITRITE-NITRATE	15.6 MG/L		

SEE REVERSE SIDE FOR WATER QUALITY REPORT SIGNIFICANCE

OKLAHOMA WATER RESOURCES BOARD
Muskogee

C. 77 Muskogee

----- LEGAL -----
NW SW SE 16 15N 19E IV

5. - WATER SURROUNDING AMMONIA TOWER

Figure 1

REQUISITIONER COPY

 $\Delta^2, \Delta^3, \Delta^4$

77462 OKRB NUMBER 4638
03/19/81 TIME 11:30
03/20/81
03/27/81
FANSIEEL OK
JJB

OKLAHOMA STATE DEPARTMENT OF
STATE WATER QUALITY LABORATORY
WATER ANALYSIS REPORT

WATER QUAL DIV
OKLA WATER RESOURCES BOARD
12TH FLOOR OSDH BLDG
OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

AMMONIA AS N	277.000 MG/L	FLUORIDE TOTAL	64.00 MG/L
KJELDAHL NITROGEN N	3030.000 MG/L	NITRITE-NITRATE	12.3 MG/L
SUSPENDED SOLIDS	14 MG/L		

SEE REVERSE SIDE FOR WATER QUALITY REGULATORY AGENCY CALL

OKLA WATER RESOURCES BOARD
Muskogee

Muskogee

LEGAL
NW 1/4 SEC 16 T13N R19E I
OUTFALL 001

REQUISITIONER COPY

Robert D. Shaw

77009 OWRB NUMBER 4769
 02/26/81 TIME 11:30
 02/28/81
 03/10/81
 FANSTEEL
 J.J.BLACK

OKLAHOMA STATE
STATE WATER
WATER ANALYSIS

WATER QUAL DIV
 OKLA WATER RESOURCES BOARD
 12TH FLOOR OSDH BLDG
 OKLAHOMA CITY OK 73152

OKLAHOMA WATER RESOURCES BOARD

BOD 5 DAY	25.0 MG/L	CHEMICAL OXY DEM HL	102.7 MG/L
FLUORIDE TOTAL	8600.00 MG/L	NITRATE AS N	12.230 MG/L
NITRITE AS N	5.500 MG/L	NITRITE-NITRATE	12.2 MG/L
PH	8.2 SU	SPECIFIC CONDUCTANCE	11100 UMHOS/I
SULFATE	3889 MG/L	SUSPENDED SOLIDS	23 MG/L
TOTAL ALKALINITY	170 MG/L	TOTAL HARDNESS	155 MG/L
TOTAL ORGANIC CARBON	11.0 MG/L	TOTAL PHOSPHOROUS P	.100 MG/L
CADMIUM-TOTAL	6 UG/L	CALCIUM-TOTAL	46.0 MG/L
CHROMIUM-TOTAL	11 UG/L	COPPER-TOTAL	55 UG/L
POTASSIUM-TOTAL	720.00 MG/L	ZINC-TOTAL	14 UG/L

SEE REVERSE SIDE FOR WATER QUALITY REPORTS AND DATA

OKLA WATER RESOURCES BOARD

Musky

RECEIVED

REMARKS: SEE EXPLANATIONS
 SEE DETECTION LIMIT

NW SW 16 13N 19E D MAR 16 1981

COMPOSITE 24HRS. OUTFALL 001. Oklahoma Water Resources Board

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Lois M. Shuman